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Agricultural Change and Its Mechanism in the Bemba Villages of Northeastern Zambia

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ABSTRACT The agricultural movement in the Bemba villages, which are located in the southwestern part of the Mpika District of Zambia, is examined. Villagers have begun to cultivate the permanent fields (called *faamu* in Bemba) of hybrid maize for a cash crop, using chemical fertilizer, while at the same time retaining their traditional way of cultivation, the *citememe* system. *Faamu* cultivation began to boom after 1982. To understand this phenomenon, the process of opening the *faamu* field was described, and the statistical trend of maize production since 1980 was analysed. Finally the mechanisms involved in the acceptance of increased *faamu* cultivation at the village level were revealed, focusing on the "leveling mechanism", which sometimes both deters *and* promote changes.

INTRODUCTION

Since 1983, we have carried out an anthropological research on the Bemba, who live in the woodland area of northeastern Zambia. The basic aim of the research was to examine the Bemba's actual living conditions scrupulously, while considering the relationships between the environment, the subsistence economy, and socio-cultural traits. Through such research, we attempted to explore the ecological basis which has enabled the formation of a huge kingdom in the past, and to grasp dynamically the life of the Bemba which at present faces a drastic change. In short, ours was a socio-ecological research of tradition and change within the Bemba culture (Kakeya and Ichikawa, 1983). With these ideas in mind as the background to our research, this paper attempted to note the new agricultural trend at the village level and primarily attempted to put some light on the subject of change in the Bemba village.

The Bemba can be regarded as cultivators in the woodland, and their traditional aspects of life are clearly observed in a unique slash-and-burn cultivation technique called the *citemene*[1)] system. In order to examine the basic nature of the *citemene* system, we lived in a small village, Mulenga-Kapuri, near the outskirts of the center of Mpika District and carried on an intensive study of the Bemba system. As a result, it was proven that they cultivated finger millet of an African origin by opening the *citemene* field using almost the same cultivation technique which Richards (1939) had earlier reported. Also, they still preserved their tendency to rely heavily on the production of finger millet as their major means of subsistence (Kakeya and Sugiyama, 1985; Sugiyama in this volume).

However, the Bemba were stepping forward into a new situation, while at the same time retaining their traditional characteristics. A typical example of this

change can be seen in an increase in the number of permanent fields, where the maize are cultivated as a cash crop. They have begun to make efforts to cultivate hybrid maize using chemical fertilizer and to sell them at the public market. They call this permanent field "*faamu*", which apparently came from the English word "farm".

In our research of 1985 we carried on an extensive survey over all the Bemba land. The survey's aim was to attest the development of the *faamu* cultivation . In the suburbs of Kasama in the Northern Province and in the area around Citimukulu, where the Paramount Chief lives, many villagers have already given up *citemene* and depended primarily on *faamu* cultivation.

In this paper, the discussion will center on the developing *faamu* cultivation. It will try to clarify the mechanisms of change that are promoted at the village level.

FAAMU CULTIVATION

Mulenga-Kapuri, our center for research, is located on the road (we call it "Kopa Road") that connects Mpika, the District Center, and Kopa, where the chief of the Bisa lives (Fig. 1). In 1985, a census study of the villages along the

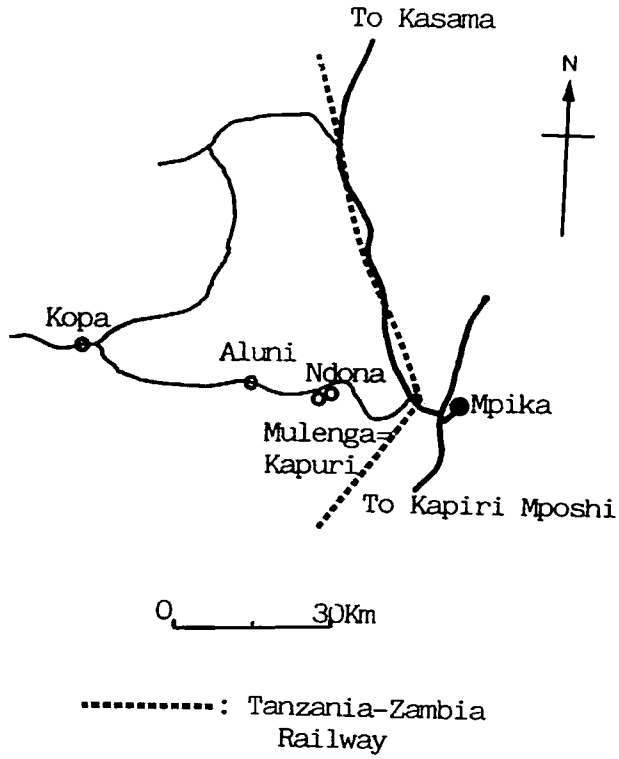

Fig.1. Study area.

Kopa Road was carried out along with an intensive survey in Mulenga-Kapuri. There are twenty villages in various sizes along the road of some 38 km long, which starts at the junction of the main road between Kasama and Mpika and goes as far as Aluni. As the result of the census, it was revealed that in *faamu* cultivation there were two distinct types of villages; the villages where people primarily depend on the traditional *citemene* cultivation and mound cultivation (*ibala*) and do not cultivate the *faamu*, and the villages where most of the villagers cultivate the *faamu*. The former type is represented by Mulenga-Kapri and Ndona, neighbouring villages. The latter is represended by Aluni, where people first began the *faamu* cultivation among the villages along Kopa Road and continued to increase the production of maize every year.

In this chapter, the process of *faamu* reclamation will be viewed first, then an example of Mr. A. who began small scale *faamu* in Ndona, and an example of Mr. B, who cultivated *faamu* intensively in Aluni will be presented in order that we may examine the actual condition of each cultivation.

1) The process of reclaiming *faamu*

Though a larger plain field must first be obtaind, and the roots of the trees in the field must be removed, the process of clearing the land itself is similar to that of the traditional mound field (*ibala*)[2)]. Savanna-like fields near the village, where trees are scattered, woodland areas where the tree density is low, or the land formerly used for *citemene*, are chosen for clearing. The clearing process is recognized as a complex composed of three different works described below.

1. Cutting down and burning trees:

Removing trees on the land which is to be used for *faamu* is the most basic work. Usually, the trees are cut at the root with an axe, but sometimes the ground around the root is dug with a hoe and the trees are rooted up forcibly (*kushula*). The trees and branches are piled around the big cut trees which are scattered in the clearing. They are left to dry for a certain period of time, then fired to make a small swidden field (*cikuka*). In the case where there are big trees in the clearing, they climb the trees and cut all the branches down and make *cikuka* there, though the big trees will eventually be cut down anyway. Finger millet is sown in the *cikuka*, and after the second year, the field is hoed and the maize is planted.

2. *Kufundikila*

The cleared land and the grassland around the *cikuka* are tilled roughly with a hoe. The soil is then crushed and long or round mounds are made by putting weeds down into the mound. This work is called *kufundikila*. As for the traditional *ibala* cultivation, they make mounds in the beginning of the rainy season and then plant sweet potato, cassava, native maize, and beans. However, when opening the land for the *faamu* cultivation, *kufundikila* is usually done in the end of the rainy season in March or April after the other field work has been completed. The soil is soft at this time because it has absorbed the rain. The land is left barren until the mounds are to be crushed. The ground is leveled around the beginning of the next rainy season. *Kufundikila* is a traditional way to open the fields.

3. Removing the roots:

Small roots are dug up and removed with a hoe. Big roots are left as they are for a year, then dried branches and grass are piled around the roots and fired in order to burn up the roots in the ground (*kucikosesha*).

Usually, these works described above are gradually promoted according to the

situation, therefore, fields in various stages of opening coexist in the recently opened *faamu*.

Seeds of the hybrid maize are provided by NAMBOARD (the National Agricultural and Marketing Board). In the middle of November, the seeds are sown along a rope stretched in the tilled field. When the three leaves grow, chemical fertilizer is spread. The fertilizer is used again when the maize has grown knee-high. The maize is harvested in the following June or July.

2) An example in Ndona: the case of Mr. A

In Mulenga-Kapuri, which is a small village with twelve households and a population of fifty, no one cultivates *faamu*. All the households are engaged in the traditional *citemene* and mound cultivation (Kakeya and Sugiyama, 1985). In the neighbouring Ndona, a village with 28 households and about 160 people, three villagers attempt *faamu* cultivation. Mr. A is one of them.

Mr. A was asked by one of his relatives, who runs a restaurant in Mpika, to graze cows for him. In order to secure the pasturage and to avoid troubles caused by the cows, such as their damaging the fields owned by other people, the family of Mr. A moved to a place about two kirometers from the village of Ndona in 1982. At this time, the family began the *faamu* cultivation. Figure 2 shows a rough map of the *faamu* owned by Mr. A in 1985.

In 1982, when he moved to his place, Mr. A first sowed finger millet in his *cikuka* and planted cassava in a part of the mounds made by *kufundikila*. In 1983, he introduced fertilizer and attempted the cultivation of hybrid maize. In the same year, he opened the outer area of his maize field to plant cassava. In 1984, he expanded the maize field while planting ground nuts in another part of his field. He also opened a new *cikuka* and sowed finger millet. At the same time, he cut trees in the area. He worked hard at *kufundikila* using a part of the cleared land at the end of the rainy seazon in 1985. He continued to expand his field while opening the *cikuka*. The acreage of his maize field in 1984 was 28 a. He harvested seven bags (90 kg each) of maize in 1985.

Mr. A also cultivated *citemene* near his *faamu* every year. The total acreage of *citemene* opened in 1984, including a small *citemene* cleared by his son, who was in the elementary school, was about 35 a. It was assumed by the research in Mulenga-Kapuri in 1983 that the mean acreage of *citemene* per household was 45 a (Kakeya and Sugiyama, 1985). Therefore, the acreage of Mr. A was below the average by 10 a.

The *faamu* of Mr. A can be regarded as more developed compared to other traditional *citemene* and *ibala* fields.

3) An example in Aluni: the case of Mr. B

The village of Aluni is located on the border of the Bisa territory, at the western end of the Bemba residential area along the Kopa Road. An impressive landscape showing a vast *faamu* field extends on the south side of the Kopa Road. It was a big village with 74 households in 1985. Providing that a household consisted of four people, the approximate total of villagers who lived in the village was about 300.

Mr. B moved to Aluni, where his wife's parents lived, shortly after Zambia declared independence in 1964. He began cultivating *faamu* in 1982, and he harvested 18 bags of maize in 1983, 51 bags in 1984, and 35 bags in 1985. Mr. B is well known among the people along the Kopa Road as a hardworking farmer.

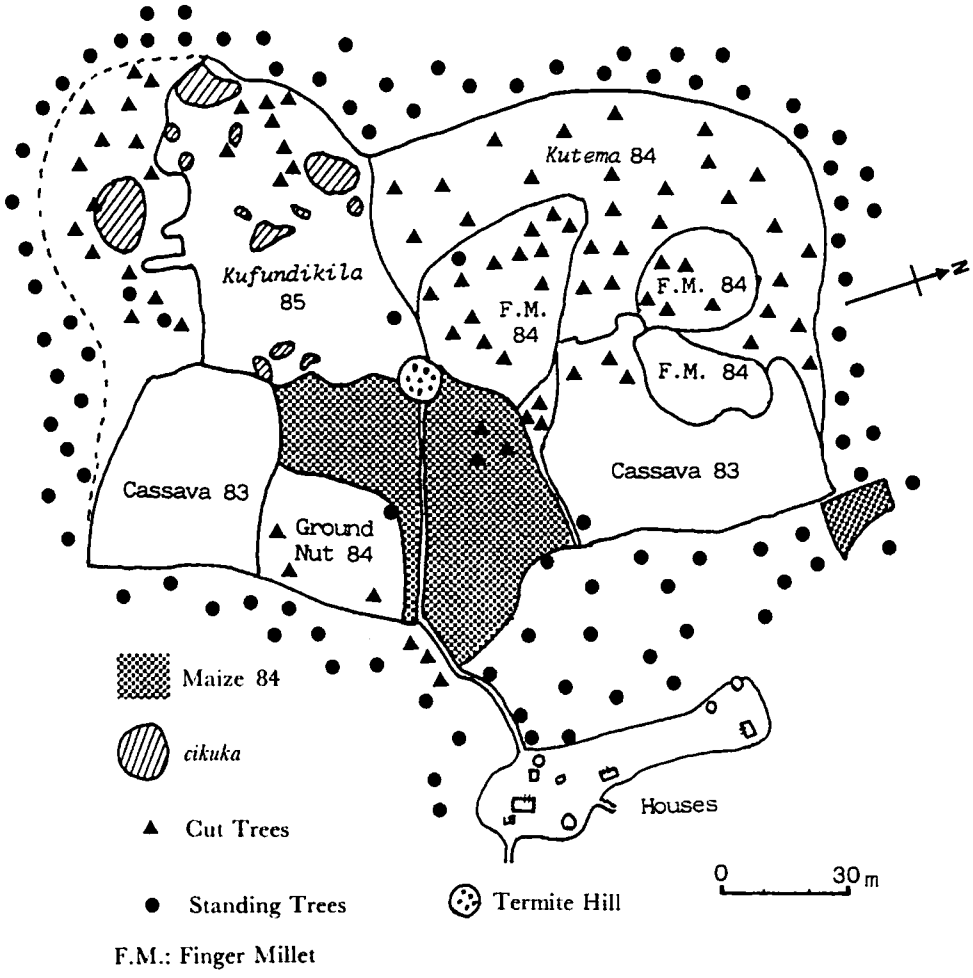

Fig.2. *Faamu* condition of Mr. A in 1985.

Figure 3 is a sketch of Mr. B's *faamu*. Most parts of his *faamu*, both the fields on the southern side of the road and the fields on the northern side of the houses, have already been cleared well and exhibit the appearance of proper *faamu*. The fields on the northern side are still expanding. In 1984, the acreage of maize field was 1.34 ha in total. In 1983 and 1984, Mr. B stopped cultivating *citemene* and put fertilizer on a part of his *faamu* in order to plant finger millet. However, in 1985, he did not plant crops in the field on the southern side of the road because of an illness. He opened a *citemene* in a place about 2.3 km southeast of his village. The acreage of the *citemene* was about 37 a.

As for Mr. B, although he began to open the *faamu* about the same time as Mr. A did, he intended to cultivate the *faamu* intensively from the beginning, and he told us that he would continue this cultivation concentrating mainly on the *faamu* cultivation.

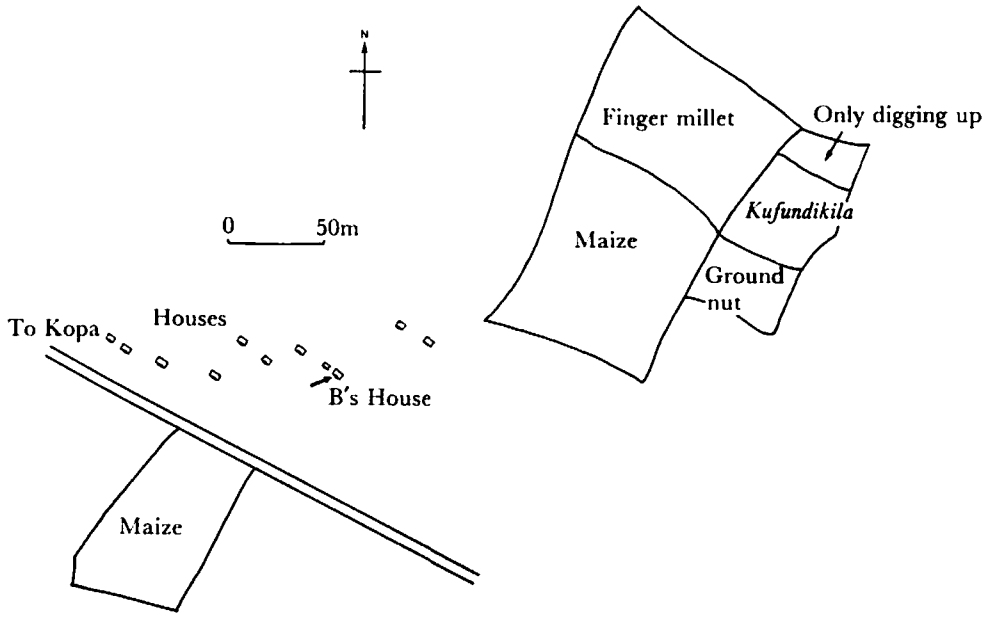

Fig.3. *Faamu* condition of Mr. B in 1985.

THE MODERN TREND OF MAIZE PRODUCTION: A STATISTICAL ANALYSIS

As already suggested in the description of the *faamu* opening process by Mr. A and Mr. B, the production of hybrid maize in the villages along Kopa Road grew rapidly after 1980. In this chapter, we will try to examine the changes in maize production after 1980, using the statistics that were obtained in 1985. For this analysis, five areas will be designated; the whole of Zambia, the Northern Province, the Mpika District, the Luchembe Chiefdom, and the Aluni Depot (Fig.4). Depot has the smallest unit of maize collection. The villages of Mulenga-Kapri, Ndona, and Aluni are included in the collection area of Aluni Depot. There are seven Depots in the Luchembe Chiefdom including the Aluni Depot, All the values in the statistics show the amount of maize sold to NAMBOARD by the 90kg bag unit (Table 1).

Table 1 shows changes in the absolute amount of maize collected at each area from 1980 to 1984. Figure 5 shows the graph of indices, making the value in 1980 100.

As for the change in the maize production in the whole area of Zambia, a joint-paper researched by both Japanese researchers and the staff at the University of Zambia (Kaunga et al, 1983) presents a simple and exact analysis of the results. It is briefly summarized below in order to provide background information to our own analysis.

In 1979 and 1980, the production of maize was greatly reduced. This was the result of the low market value of maize combined with Zambia's prolonged economic crisis. It is assumed that the increase of production in 1981 was due to the new agricultural policy which included the raise in the price of maize for the pro-

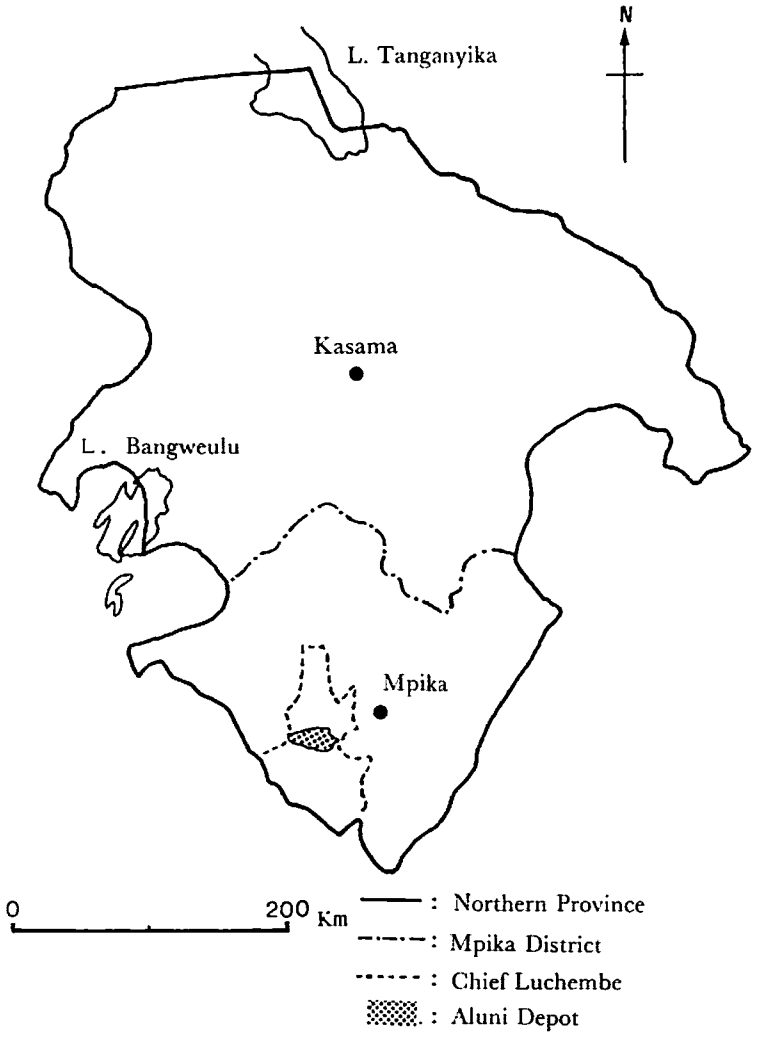

Fig.4. Mpika District, Chief Luchembe and Aluni Depot in Northern Province.

ducer. The reduction of production after 1982 was a result of severe drought conditions in the major production areas, such as in the Southern, Eastern, Lusaka, and Central Provinces.

In the Northern province area, the production increased rapidly in 1981 and 1982, and gradually increased after 1983 as seen in the figure. In the Mpika District, the production increases continuously at a high rate every year.

In the Luchembe Chiefdom and Aluni Depot areas, it can be noted that the production increased dramatically after 1982. The market value established by the government in 1982 was 16 kwacha for a 90 kg bag, which was 18.5% higher than the price of the previous year when the price was 13.5 kwacha. Thus, the influence of the agricultural policy was striking, even though the absolute amount of production was small at that time in 1980. In these two areas, it is shown that the pro-

Table 1. Maize intake by the official marketing organization according to year and area. (90kg bag)

Harvest year	Zambia*	Northern* Province	Mpika** District	Chief** Luchembe	Aluni** Depot
1980	4,247,404	159,264	16,434	227	23
1981	7,703,794	328,273	28,996	423	65
1982	5,671,613	648,273	38,030	1,490	245
1983	5,901,824	648,590	54,007	2,610	219
1984	6,347,637	750,552	63,172	3,878	519

Source *: Kaunga et al., 1983
Ministry of Agriculture and Water Development (Zambia), 1985
**: IRDP, Mpika

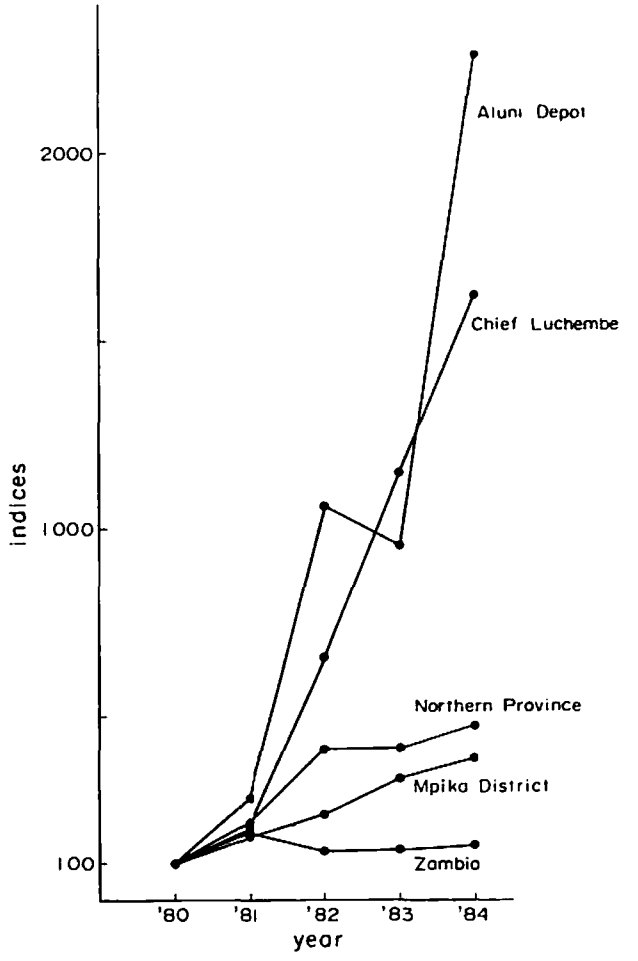

Fig.5. Maize intake according to year and area, shown by indices, making intake in 1980 100.

duction increased remarkably with the year of 1982 serving as a turning point in production.

At the individual village level, the increase of maize production appears to be due to the increase in *faamu* cultivators. The result of a census study of the villages along Kopa Road shows that many people started maize cultivation in the *faamu* after 1980. Many of them reported that they began *faamu* cultivation after 1982 or 1983. Therefore, it can be concluded that the census largely supports the result of the statistical analysis.

THE MECHANISMS INVOLVED IN THE ACCEPTANCE OF INCREASED *FAAMU* CULTIVATION

The remarkable increase of maize cultivation in *faamu* for these five years is important to study for the purposes of understanding the process of change in the Bemba's way of life. One fact provided by the census is significant: the majority of villages along Kopa Road can be clearly divided into two types; those which practice the *faamu* cultivation and those which do not. In this chapter, Aluni, Mulenga-Kapuri, and Ndona will be taken as examples again, and their situations will be examined at the village level. The acceptance of increased *faamu* cultivation will be discussed, based on a comparative analysis of the villages.

1) The processes involved in *faamu* cultivation: Aluni

According to the data on Aluni taken from an interview with villagers, Mr. C was a pioneer of maize cultivation in the village. He returned to the village from town shortly after Zambia declared independence. He planted cassava in his *ibala* at fiast, and then began to cultivate maize. In the beginning, the villagers ignored or ridiculed him. However, in the 1970s people noticed that he was making money using maize cultivation, and so began one by one to follow him.

The total number of households in Aluni was assumed to to be about 74. The house in the village generally extend along the road. In order to reveal the present condition of *faamu* cultivation, interviews were carried out on the 36 households located in the western half of the village. Our main concern was to note whether the households harvested maize in 1985. The result of this research is shown in Table 2. We considered as an index whether or not the households opened *faamu*, regerdless of the scale of the *faamu*: 23 households practiced the *faamu* cultivation, which accounts for 64% of the total households in the village. The remaining majority of the 13 households were either old couples, widows, sick people, or were those who

Table 2. Maize production in Aluni village in 1985.

Production (90 kg bag)	No. of Household
1–9	20
10–19	2
20–29	1
Total	23

had newly arrived in the village in 1985. Many of the *faamu* cultivators had started the cultivation after 1982, some of them first attempting cultivation in 1984.

Among these people, the case of Mr. D is interesting, because he has chosen a different career in comparison to the other villagers. Mr. D came to the village in 1972 as an officer of the Tse-tse Fly Control Board which is located about 1km west of Aluni village. He lived in Kasama before he was assigned to Aluni. He has been cultivating maize in his *faamu* since 1975, and in 1985 sold 19 bags of maize. He dose not have a *citemene*. He is independent in his farming patterns and is considered therefore to have characteristics of a marginal man, to be discussed later in the paper.

IRDP(Integrated Rural Development Project), a British organization which has its center in Mpika, defines those who produce more than 30 bags of maize as commercial farmers. There are three commercial farmers in the whole village of Aluni; in 1985 they sold 50, 35, and 30 bags of maize respectively. Mr. B, whose way of cultivation was previously described in Chapter 2, is one of the three commercial farmers.

In Aluni, it was noted that a pioneer began maize cultivation in 1966, but *faamu* cultivation did not reach its peak or begin to boom until after 1982.

What then was the factor that promoted the opening of *faamu* at the village level? Let us assume from the description and analysis above, that the process was an eager reaction on the part of the Bemba farmers to the agricultural policy introduced after 1980, more specifically it was a reaction to the raise in the selling price of maize in 1982. The promotion of change at the village level, however, cannot be fully explained, by the agricultural policies at the government or district levels or by socio-economical factors. In other words, the process can not be attributed merely to outside factors, because there are villages whose people have never undertaken the *faamu* cultivation. Therefore, it is necessary to analyse both the inside and outside factors which effect the villages.

2) The Leveling mechanism and the marginal man: Mulenga-Kapuri, Ndona

Mulenga-Kapuri and Ndona are two neighbouring villages, the total households are 40 and the population has reached an approximate total of about 210. In these two villages, only three people undertake *faamu* opening. In 1985, the maize productions of the three people were 9, 7, and 3 bags each. Only a few of the villagers promote small scale *faamu* cultivation in the two villages.

Compared to the case of Aluni, it is natural to consider that some factors which might restrain the development of the *faamu* opening would exist in Mulenga-Kapuri and Ndona at the village level. We present the hypothesis that this factor is closely related to the leveling mechanism which works strongly to govern the village life and maintain a life of subsistence.

As is indicated by the intensive study of the subsistence strategies for managing the *citemene* system in Mulenga-Kapuri (Kakeya and Sugiyama, 1985; Sugiyama's paper in this volume), the behavioral norm to avoid *kutana* (withholding), or, to share with others, plays a significant role and is the basic principle that supports the subsistence economy and the daily social life of the Bemba. This behavioral norm acts in every scene concerning material things. The social restriction to avoid *kutana* works as a leveling mechanism in the affairs of the distribution and consumption of material goods and in its turn, works to restrain individuals from being too prominant or too distinct within the community.

Kakeya (1976) pointed out in his paper on the Tongwe, more specifically a slash-and-burn cultivator who inhabits the woodland in the western Tanzania, that food is shared among individuals and settlements and shows a general "leveling tendency" in their society. This tendency has the same quality as that of the Bemba's avoidance of *kutana*. In addition, in the case of the Tongwe, the "leveling tendency" is supported by the fear of sorcery. As for the Bemba, it is rather an uncommon occurence that an accusation of sorcery is brought before the public, though the fear of sorcery always lie behind their life.

The leveling mechanism is seen as a deterrent to change in the context of daily life, and therefore must be broken through. The so called marginal man plays an important role in this action. Generally, the marginal man is the one who is distinct from the other villagers because he may have a higher education. He may have less matri-kins in the village and therefore may be more isolated socially. He may also be a pioneer in introducing a new economic activity. Those who began the maize cultivation in Ndona village had similar traits to those of the marginal men for example.

One of them is Mr. E who is married to a girl in Mulenga-Kapuri. His house belongs to Ndona, though it is located at the border of Mulenga-Kapuri and Ndona. He never participates in the communal net hunting in which people of both villages get together and hunt wild animals. He has only one matri-kin in Ndona, where he lives. In 1980, he began to do small scale trading. He went to a Bisa village in the Bangweulu swamp area by bicycle to barter the finger millet he had produced in his *citemene* for swamp fish. He brought back the fish to sell in the Bemba villages. Because of this trading, he saved money and bought a small amount of hybrid maize seed and chemical fertilizer. He tried *faamu* opening on a small scale basis in 1982. Since then, he decided to promote the *faamu* cultivation and has been expanding his field little by little. He produced 3 bags of maize in 1985.

Another man, Mr. F, eagerly undertook an experimental cultivation of new crops. He began to open his *faamu* in 1979, and started to work intensively with maize cultivation in 1984. In 1985, he was preparing to cultivate maize and soy beans. Mr. F studied at the agricultural training center for a short period of time, and acquired up-to-date knowledge of agricultural sciences. Also, he has been trained as a curate of the Catholic church and sometimes takes charge of the mass in the village. In 1985, he produced 9 bags of maize, which was the biggest production among the three men. When he becomes ill, villagers whisper that he is under the power of sorcery.

The third man is Mr. A who was previously discussed in Chapter 2. He was asked by one of his relatives in Mpika to take care of his cattle. He began to live away from the village because of the cattle and eventually he started the *faamu* cultivation.

These marginal men innovate the agricultural changes, though it may be in a small ccale, and continue working with the changes. Other villagers are given the chance to observe and hear directly about the process and the results of the men's innovative actions in the context of their intimate relationships in daily life. After a certain period of time, villagers begin to admit that there is a positive value in the men's innovative actions. This process can be called a "ripening of the inside factor".

If the inside factor begins to ripen, and at the same time the outside factor, such as the rise of the producer's price falls into line, the *faamu* cultivation would rapidly spread all over the village . Then, the leveling mechanism which has worked as a mutual restriction would turn into a mutual encouragement mechanism. It is our conclusion that the *faamu* cultivation has been eagerly promoted in the whole village of Aluni through this process.

CONCLUSION

In this paper, the *faamu* cultivation, which is becoming a new trend in the Bemba society, was discussed, and the mechanism which sometimes both deterred *and* promoted *faamu* cultivation was revealed. This mechanism discussed in this paper can be regerded as a basic feature in the Bemba society.

Many Bembas are changing towards an increase in *faamu* cultivation. However, many Bemba farmers have been complaining of the delay in maize-bag transportation and payment and the rise in the price of fertilizer and other commodities. This indicates that there is a possibility that they may return to the traditional *citemene* cultivation. The present coexistence of the *citemene* system and the *faamu* cultivation indicates that the farmers in modern Africa are adaptable and have created adaptable strategies in order to deal with the changes in agriculture. They are searching for their way to exist somewhere in between tradition and modernization.

NOTES

1) Bemba words will be written in italics and all of them will be given in singular form except for the conventional use of plural forms. Also, all the preprefix vowels of words will be omitted as in a dictionary.
2) The traditional methods of *ibala* cultivation are well described in Richards, 1939 (pp.302–304).

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